

Thesis on the

subject of

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P U R P U R A.
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By

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C o l w a l l,

M A L V E R N

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April, 1906.

ἡ ἰατρικὴ τέχνη
κοτὶ τοῦτου οὐ θεραπεύει
καὶ τὴν φύσιν ἐόκερται
καὶ τὴν αἰτίαν ὧν πράττει
καὶ λόγον ἔχει τούτων
ἐκαστοῦ δοῦναι.

Philosophi enim veri, qui amore veritatis et sapientiae flagrant,
humquam se tam σοφῶς, sapientia plenos reperiunt, aut suo sensu
abundant, quin veritati, a quocumque et quandocumque venerit,
locum dent. Nec tam angusti animi ut credant quamvis artem
aut scientiam adeo omnibus numeris absolutam et perfectam a
veteribus traditam, ut aliorum industriae, et diligentiae nihil sit relinquendum.

P U R P U R A.

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D E F I N I T I O N.

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The word purpura (purpureus - purple) is a general designation for a malady symptomatic of many conditions, and includes all extravasations of blood into the skin and mucous membranes not resulting from traumatism. Purpuric eruptions occur in the skin in various general diseases, but these are usually referred to as secondary purpuric manifestations or as secondary or symptomatic purpura, to distinguish them from the cases in which the purpuric condition is the dominant factor in the clinical picture presented. The occurrence of haemorrhages of greater or less extent in the skin, and unaccompanied by definite disturbances of the general health, has been the basis of the designations hitherto employed in the group of symptoms known as purpura.

G E N E R A L N A T U R E A N D

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C A U S E S.

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There are a great number of conditions that may give rise to cutaneous haemorrhages and bleeding from the mucous surfaces of the body, and all of these, in view of the clinical importance of the subject, I purpose describing at some length.

In some patients suffering from considerable weak-

ness of the heart from some morbid condition or other, or in whom local obstructions of the circulation have occurred,- in the skin of the legs, or in other parts, one may observe the presence of haemorrhagic extravasations. In such instances the nature of the purpuric manifestations is easily understood, the cause being purely mechanical. The massage of persons having a thin skin and a rather hairy surface, will sometimes give rise to mechanical purpura of a still more undoubted character; or in other cases the same condition may arise from the obstruction of the circulation produced by varicose veins, the purpuric lesions being found on the limbs in which the abnormality in question exists. **Purpura senilis** may be placed in the same category. It appears to be peculiar to aged persons; and the haemorrhages occur in the skin of the upper or lower extremities or elsewhere, without the least disturbance of the health before, during, or after the attack. In such cases there can be no doubt that the senile atrophy or atheroma of the vessels in conjunction play an important part in the etiology. In a measure such cases are toxic, as doubtless the vascular changes are frequently the result of slowly developing toxic disturbances, but the manifestations in question are mechanical at the time when the haemorrhagic extravasations occur.

Toxaemia may also give rise to purpura, the purpura medicamentosa being the best-known example of this condition; in it the purpuric haemorrhages follow immediately upon some form of drug intoxication. Among the drugs capable of causing these results are phosphorus,

iodine, iodide of potassium, the salts of mercury, nitrate of silver, chloral, chloroform, kairin, antipyrin, and many other medicinal agents such as calomel. Poisoning by the venom of serpents, scorpions, and other animals may also give rise to local or distant toxic purpuric haemorrhages. It likewise happens sometimes that the haemorrhages are among the ~~effects~~ effects of intoxication with poisons generated by the activity of the organisms which have gained access to the body, or they may be due to other processes ~~therein~~. It is difficult to estimate the extent to which the toxins are active in the haemorrhages which occur in various infectious diseases, but certainly it is the chemical poisons and not the bacteria themselves, in at least some of the cases. Experimentally it has been proved repeatedly, and for various forms of bacterial products that are capable of producing haemorrhages. In these cases acute degenerative lesions of the blood vessels, or of the tissues immediately adjacent to the vessel walls, are the first effect of the intoxication, the haemorrhages being the secondary result. Doubtless in some instances alterations in the blood itself are first occasioned, and this may be an important contributing cause of the haemorrhages; but the tendency of the present time is rather towards the view that vascular and tissue changes are more important than alterations in the blood. Secondary mechanical haemorrhages may result from thrombosis in the smaller vessels, - ~~white~~ thrombi, hyaline thrombi, - due to tissue destruction, and perhaps also blood destruction under the influence of bacterial poisons. The purpura cachectica constitutes

a third group of toxic purpura. It is observed in chronic or cachectic affections, such as in cases of cancer, chronic Bright's disease, syphilis, amyloid disease, and hepatic affections attended with biliary poisoning; and perhaps it is proper to include the haemorrhages of pernicious anaemia, Hodgkin's disease, and leukaemia. In all of these diseases apparently, spontaneous haemorrhages may occur in the skin or elsewhere; and in the analysis of the probable causes it would appear that most likely the toxic agents acting first upon the blood-vessels are the important etiological factors. In such conditions as nephritis, syphilis, and amyloid disease, changes in the blood-vessels are well known, and the cause is quite generally recognised to be poisons generated in the course of the disease; in the other forms of marantic or cachectic purpura, a similar pathogenesis may be assumed in some instances. That obstruction of the vessels by thrombi or by cellular masses, - leukaemia, - may contribute to the occurrence of haemorrhages in certain instances is, however, not unlikely to be the case.

It is a well-known fact that certain cases of purpura - in the broadest sense of the term - may be of an infectious character, and for such the special category of infectious purpura is reserved. Instances of such are to be found in the haemorrhagic manifestations occurring in certain cases of scarlatina, measles, variola, enterica, anthrax, and other infectious fevers. To these cases the distinguishing terms, purpura scarlatina, morbillosa, variolosa, etc., have been applied; and the cause of the haemorrhage is recognised to be the infectious agent in the several diseases, or the products of

these. The modern teaching of bacteriology leads to a ready acceptance of haemorrhages, of greater or less extent, as lesions common and quite insignificant in nearly all forms of infection. Experimental proof of this fact was furnished by Gaspard, as early as 1822, who showed that purpuric manifestations could be caused by injections of putrid matter. In recent years observations of this nature have been repeated in every laboratory, not only with putrid materials, but also with pure cultures of various bacteria. In addition to these facts, and approaching ~~more~~ more closely to the present subject, experimental evidence has not been wanting that purpuric manifestations may be caused in animals by direct inoculation with blood from affected persons. Thus, the haemorrhagic phenomena were reproduced by Ceci and others by injecting the blood of a purpuric patient into some laboratory animals. Furthermore, in cases presenting the clinical features of purpura haemorrhagica, either with or without antecedent local diseases, the presence of various forms of micro-organisms has been demonstrated by bacteriological examinations. Among the instances in which the purpura has associated itself with other diseases may be noted cases of malignant endocarditis, pseudomembranous or suppurative forms of pharyngitis and tonsillitis, various forms of local suppurations, as abscess, cellulitis, suppurative osteomyelitis, phthisis with cavities, suppurations of the umbilicus in the newborn, and the like. Among the organisms detected in such cases the most frequent have been streptococci, pneumococci, and the bacillus pyocyaneus. Instances of

this kind are generally classed as cases of secondary, symptomatic, or infectious purpura, in contradistinction to the forms in which no antecedent disease is recognised, and in which the term primary or idiopathic purpura is used. The latter, however, are undoubtedly in most, if not all, of the cases infectious in nature, as may be determined from the nature of the lesions observed, the evident widespread character of the systemic affection, the clinical course of the disease, and the direct evidence of bacteriology. Of the lesions the haemorrhages are most significant, as in experimental forms of infection, and the distribution of the disease evidently follows the vascular system in all parts of the body. The onset of the disease after prodromal symptoms of variable duration and the clinical manifestations are further evidences of the nature of the condition, while in some instances local epidemics, and even probably contagiousness, ^{have} ~~also~~ been observed. An interesting instance favouring the last point was reported by Lingen. A pig was taken ill with "Irish purpuric disease", exhibiting purpuric spots on its belly, face, and nose before death. A servant girl who attended the pig was attacked with febrile symptoms and was ill six weeks, while the owner of the pig had suffered, presenting large purpuric spots on the loins and thighs, and smaller ones elsewhere. The cowman died in three days after a similar attack. Instances of this character may be multiplied; but sufficient is known regarding these conditions to lead to the firm conviction that purpura is an infectious disease or group of diseases, the source of

infection being obscure; that, in other words, it represents a form of cryptogenetic sepsis. Further investigations may clear up the question of the original source, but hitherto bacteriological studies have been successful only in discovering ^Micro-organisms in the blood and in the tissues. In several cases studied by Kolb, short thick bacilli, pathogenic for mice, were discovered in the blood and tissues, and somewhat similar organisms were found by Tizzoni and Giovanni, Victor Babes, and others. Letzerich described bacilli resembling the anthrax bacillus in appearance. Klebs, who was one of the first to develop the idea of infection, found a round body which he termed "Monas haemorrhagicum", in cases of "haemophilia of the newborn". Vassale, Ceci, Grimard, Cheyne, Rohrer, Hlava, and other investigators ~~have~~ more recently discovered micrococci, and especially streptococci, in these cases. There can be no doubt that in the development of purpuric conditions of various kinds micro-organisms play a prominent part. In some instances there are definite antecedent conditions to which the infection may be traced, and the term secondary purpura may be applied to such; but that of primary infectious purpura must be applied to those other cases in which the sepsis is cryptogenetic. Though in some cases definite lesions have been discovered in the blood-vessels, the manner of action of the bacteria in question must for the present remain in doubt. Among these changes Babes has found hyaline degeneration of the walls of the vessels; Wilson and Grainger Stewart amyloid degeneration; Hayem and others proliferative or desquamative endarteritis, or similar processes, in the capillaries, leading to local

weakening, or to obstruction with consequent overdistension and rupture on the proximal side. Accumulation of leucocytes or hyaline thrombosis has been observed by Hayem, Ollivier, and Ranvier, and bacterial embolism is doubtless very frequently the immediate cause of haemorrhage. It was demonstrated by Cheyne, Baumgarten, and others, and is commonly observed in experimental investigations. The local weakening of the vessel walls, or the distension on the proximal side of the obstruction, may be the immediate cause of haemorrhage in these cases. Toxines doubtless give rise to a degenerative weakness of the blood-vessels, and the trend of present-day thought is certainly to ascribe important functions to the chemical products of bacterial growth.

That the nervous system may have a lot to do with haemorrhagic conditions has been believed for long by experienced observers. In this connection the interesting condition known as "stigmatisation" is important. A number of celebrated instances of this have been reported and carefully studied, while innumerable instances of less striking character have been observed. It occurs in neurotic and mostly ecstatic persons, and is marked by the occurrence of haemorrhage from the unbroken skin in places corresponding to the situations of the wounds at the Crucifixion. During the periods when the manifestations present themselves the patients are usually in a great state of excitation or ecstasy, and the occurrence of the attacks bears a close relation to the neurotic state of the individual. According to Garres, the first instance of this kind was that of St. Francis

of Assisium, who was born in 1186 and died in 1236. In 1224 the most notable attack occurred, and in celebration of this Pope Benedict XI. made the 17th of September the Feast of the Holy Stigmata. Another case occurred in 1242 near Cologne, that of Christine de Stumbela. The most celebrated cases, however, are those of Palma d' Oria, - born in 1805, - and Louise Lateau, - born in 1850. The former has seen the latter in one of her attacks, which began in 1868, and became herself affected in 1871. The literature of the disease contains numerous examples, and the fact that Imbert-Gourbeyre collected 153 cases himself testifies to the frequency of the condition. Leaving, however, these remarkable occurrences out of account, alienists have often noted the presence of haemorrhages in areas in which neuralgic pains have existed, and to the occurrence of haemorrhages in the painful crises of various nervous affections. Moreover, it is not infrequent to find large or small haemorrhages in the stomach or lungs in cases of cerebral haemorrhage, epileptiform convulsions, and other nervous affections involving the brain. It is certainly true that nervous influences may determine haemorrhages in the skin or elsewhere, but that they are of importance in cases of purpura is scarcely probable. These conditions have been particularly studied by Jahn, Charcot, Schiff, and Ebstein, Schiff in particular showing that haemorrhages in the stomach could be induced by injury of certain parts of the brain.

C L A S S I F I C A T I O N.

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In the present state of our knowledge it is possible to establish only partly satisfactory groups in a clinical classification. We may divide all the cases into secondary and primary forms. Among the first are infectious, mechanical, and toxic cases, including in the first subdivision the purpuric forms of scarlet fever, variola, etc.; in the second the purpuric conditions of cardiac disease, atheroma, and the like; and in the third the form occurring in jaundice, cachexias, etc. A neurotic form might be included, but in cases of nervous disturbances the haemorrhages are rarely of distinctly purpuric type. Of the primary forms of purpura there are the purely toxic or medicinal purpuras, in which the poisons are introduced from without the body; and, second, forms due to septic infection and intoxication, and in which mechanical or nervous influences may aid in determining the seat and extent of the manifestations. Haemophilia is ^a ~~a~~ third form, with mechanical manifestations, and probably due to congenital disease of the blood or its containing vessels. Furthermore, we have also treat of those forms of purpura which are assumed to be of the nature of cryptogenetic sepsis. This term of subdivision includes the conditions ordinarily termed purpura; and doubtless it may be asserted that a number of distinct forms of disease are included, or that, in other words, purpura is a term, - even in the restricted application here given to it, - designating symptom groups rather than definite diseases. Willan included four groups: purpura

simplex, purpura haemorrhagica, purpura urticans, and purpura senilis. This classification is, however, inapplicable at the present time. The distinguishing feature of purpura urticans is too slight to warrant the use of this term to designate a special group; while senile purpura is either a secondary purpuric condition, traceable to distinct antecedent conditions, such as atheroma, cachexia, etc., or it may be included with purpura simplex. For practical purposes we may consider three forms: one in which the purpuric eruption is the dominating symptom, a second in which joint manifestations are conspicuous, and a third characterised by free haemorrhages. To these the terms purpura simplex, purpura rheumatica, and purpura haemorrhagica may be applied; but still it is probable that each group may contain different forms of infection, some of which - though differing ^{ing from} those of its own clinical subdivision - resemble those of another group, - so that no sharp dividing line can be drawn between them. In passing it may also be noted that some have endeavoured to include scurvy and haemophilia under the heading of purpura. The former of these conditions is undoubtedly allied to some of the cases of primary purpura, but its manifestations are sufficiently marked to warrant its retention as a distinct clinical entity. In haemophilia evidence is wanting to show that it bears close relations with either scurvy or primary purpura, and for the present we must look upon it as a disease dependent upon some congenital deficiency of the blood or of the blood-vessels themselves.

P U R P U R A S I M P L E X.

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ETIOLOGY.

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Purpura simplex is the mildest form of purpura, and we do not exactly know what causes it. Its occurrence is often enough noted in anaemic and badly developed persons, and sometimes it makes its appearance during convalescence from depressing constitutional disorders. Graves dwells upon its association with diarrhoea, and in some instances evidences of the articular diathesis are obtained. In elderly persons purpura simplex is sometimes observed, and has been described by many writers as purpura senilis. Hillier, following Bateman, describes it as occurring in old women "upon the outside of the forearms in successive dark, purple blotches of an irregular form and various magnitude". Aged men as well as women are liable to the affection, which may quite as well appear upon the lower extremities of either sex. It is probable that the cause in such instances is very different from that of the purpura occurring in younger individuals and in those apparently in good health: perhaps degeneration of the vascular walls alone may cause the extravasations in such cases.

SYMPTOMS.

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The affection may begin abruptly, in the midst of health, without the slightest subjective symptom, or the extravasations may be preceded for several days by some discomfort, aching of the limbs, sluggishness, anorexia,

even a small amount of fever. The eruption usually first appears upon the lower extremities, preferably, according to Duhring, the flexor surfaces of the thighs, but frequently upon the legs. It extends from these points to the upper extremities and trunk, usually sparing the face. The lesions may vary in size from that of a pin-head to that of a finger-nail (petechiae), or they may be linear (vibices). They remain discrete, and do not increase in size throughout their course. Each spot of haemorrhage will endure for from one to two weeks. At first the lesions are of a vivid red colour, and declare ^{their} ~~their~~ extra-vascular nature by remaining unaltered when subjected to pressure. The colour of these spots changes, as in ordinary ecchymosis, in consequence of the metamorphosis of the haematin preparatory to its final absorption, from crimson to purple, to blue, to green, to yellow, and finally fades away. When recent, the spots appear sharply outlined, with sometimes a faint encircling zone of hyperaemia, but as they become older their margins grow indistinct. While the early lesions slowly disappear, others continue to develop, and the affection may thus be protracted for weeks. At times the petechiae appear in crops, recurring every few days, the patient at one time apparently well, at another time worse than ever. Finally the symptoms definitely disappear, to return no more, or they pass into those of other forms of purpura. During the course of purpura simplex the deeper tissues and mucous membranes probably remain unchanged, the blood-vessels of the skin alone being affected. The general health throughout the attack may, and usually

does, remain good. As an occasional symptom there may be observed a few vesicles or blebs, containing blood, upon the skin. The extent of the general eruption may vary from a few scattered petechiae to a copious and startling number of purpuric spots. The evolution of the lesions appears to be perpetuated by the maintenance of the upright position. With the exception of the spots the patient may be free from constitutional troubles, but in other cases there may be a mild febrile movement together with some disturbance of digestion and general weakness. The appetite is poor, the patient is easily fatigued, and increasing pallor may be noted. Slight swelling of the joints is sometimes observed, but this is more characteristic of the next form to be described, purpura rheumatica. The examination of the blood shows it to be devoid of any pathological characteristic, i.e., it is normal.

CLINICAL COURSE.

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The development of the cutaneous lesion may be the only manifestation of the morbid condition; but more commonly repeated crops of eruption are observed, and the duration of the disease is thus protracted. As a rule, a single attack occupies only a few days, or a week or two at most, but relapses are not infrequent and the patients may suffer repeated attacks, lasting for months or even years.

PROGNOSIS.

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The outcome is usually more favourable than that just alluded to in the preceding section, recovery being

the rule. Cases have, however, been observed in which the disease has occurred abruptly, has run a rapid course, and terminated fatally in from one to four days. These cases, however, ought properly to be included under the heading of purpura haemorrhagica.

P U R P U R A R H E U M A T I C A

SYNONYMS.

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Peliosis Rheumatica; Schönlein's Disease.

DEFINITION.

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Purpura rheumatica is an affection characterised by the occurrence of a purpuric eruption upon the skin, by moderate fever and painful swellings of the joints, and sometimes by sore-throat or colicky pains in the region of the abdomen.

GENERAL DESCRIPTION.

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Schönlein in 1829 described as peliosis rheumatica an affection in which the symptoms of purpura simplex were associated with pain and often with effusion into the joints, especially those of the knee and ankle. He considered it as an independent malady. This opinion has been shared by Fuchs, Hebra, Kaposi, Neumann, and many others. Kaposi regards it as related to erythema nodosum, with which affection, indeed, it possesses some features in common. It probably, however, constitutes a complication of ordinary purpura, and the propriety of the term is therefore doubtful. That it is not primarily rheumatic

is shown by the almost invariable absence of many of the symptoms characteristic of rheumatism; and from its intimate relations with other forms of purpura it cannot properly be regarded as an independent affection.

Regarding the etiology of the affection, we may note that it occurs mostly in males between the ages of 15 and 35 years. Delicate individuals and those whose vitality has been lowered by previous diseases, such as malaria, tuberculosis, and other chronic affections, seem particularly predisposed, though it may make its appearance in persons apparently healthy. It is more common in cold climates than in hot ones, and also in the winter season. Its supposed association with rheumatism is indicated by its designation. In some instances a distinct rheumatic history is obtained, and patients who have suffered with attacks of rheumatism may subsequently present purpura rheumatica. This, however, is by no means invariably the case, evidence of a tendency to rheumatism, and even a suspicion of tonsillitis, being entirely absent. In the same connection it is interesting to note that some authorities have classed cases of malignant endocarditis as instances of purpura rheumatica, but such a view is no longer ~~entertained~~. It is impossible to determine at the present time whether or not this disease actually bears a distinct etiological relationship to rheumatism, ~~since~~ in neither disease specific causes have been discovered. Though it is likely that both result from allied forms of infection, and possibly often ~~from~~ the same infective agents, it cannot, however, be asserted that they are identical in etiology. It is just

before the menses that the disease is sometimes developed. Litten and Eichhorst have seen purpura rheumatica in association with gonorrhoea, but such cases must be looked upon as instances of symptomatic infectious purpura.

MORBID ANATOMY.

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Small haemorrhages have been found in the muscles, but no one seems to have observed larger extravasations. Occasionally the internal organs may show punctate extravasations, and haemorrhages are sometimes seen beneath the skin. The joints contain clear synovial liquid, while the synovial membranes themselves are congested or infiltrated with extravasated blood. At most, the lesions found in this disease are of an indefinite character.

SYMPTOMS AND COMPLICATIONS.

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Purpura rheumatica commonly begins gradually; and the more acute symptoms are usually preceded by a prodromal period of several days' to several weeks' duration. The patient becomes weak and depressed, suffers from mild pyrexia, and complains of loss of appetite. Occasionally the disease begins with the ordinary manifestations of sore-throat. The actual onset of the disease is marked by stiffness and pains in the muscles, and also by the same in the joints. The ankle and knee joint are usually first affected, and these alone may be involved. The affected parts become swollen and often are reddened and hot, the appearance of the joints being that seen in the milder forms of acute articular rheumatism. When other joints are affected those first

involved are uninfluenced by the secondary extensions; and the swelling and other manifestations about the joint usually remain localised throughout the attack. A purpuric eruption appears upon the skin coincidentally with the affection of the joints or sometimes after the latter. It is, as in the case of purpura simplex, more common upon the extensor surface of the legs. In many of the cases observed the eruption has been most abundant in the vicinity of the affected joints, but it may extend to a considerable part of the entire surface of the body. The lesions are usually small, petechial in character, and do not, as a rule, show any tendency to become confluent. Occasionally, however, confluence is observed, and large patches the size of a florin, or even as large as the palm of the hand, may develop. Not rarely the skin between the purpuric spots is elevated and oedematous, forming urticarial wheals, this association of urticaria and purpura having received the name purpura urticans. Vesicles may form upon the surface, especially in cases in which the petechiae are confluent, and in which blebs of considerable size, filled with a clear or bloody fluid, may be thus occasioned. This is the pemphigoid purpura. In other cases nodular infiltrations indistinguishable from erythema nodosum may be observed, or the lesions of erythema exudativum may be combined with the petechial eruption. Such patients are often troubled with oedema of the feet and ankles, and this may attain a considerable size. In other cases oedematous swelling is observed about the face, or in the loose cellular tissues of other parts. The association of the febrile form of

purpura with considerable oedema, especially about the face, constitutes what is known as febrile purpuric oedema. The patient's appetite is poor, he suffers from depression, and anaemia is developed with considerable rapidity. The temperature usually ranges from 99° to 103° F., but is irregular in type, and may disappear before the other symptoms of the disease have subsided. Gastro-intestinal disturbances may make their appearance, though they are usually mild, except in the form of purpura in children, presently to be described; though actual nephritis is seldom seen, albuminuria is common enough in these cases. It is not often that one observes haemorrhages upon the mucous surfaces, but occasionally ecchymoses have been seen; and Kaposi records an instance in which haemorrhagic extravasations followed by gangrene were seen in the mucous membrane covering the palate. In even rarer cases - and these belong more properly to the category of purpura haemorrhagica - large haemorrhages from the mucous surfaces, - such as haematuria, epistaxis, etc., - have been recorded.

DIAGNOSIS.

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The manifest purpuric character of the affection, the distinct prodromal symptoms, and the fact that the joint manifestations are usually less severe and much less prone to pass from joint to joint, - should be quite sufficient to distinguish purpura from rheumatism. Furthermore, in purpura cardiac complications are extremely rare, and the extreme sweating of rheumatism is less prone to occur.

PROGNOSIS.

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Except when definite complications have developed the prognosis in a given case of purpura rheumatica is usually favourable..One cannot say for certain how long the disease will last.Sometimes after a week or two, the purpuric manifestations and the swelling of the joints subside,and the patient recovers completely forthwith.In other cases,however,a protracted convalescence may be noted;and relapses are prone to occur if the patient leaves^{his} ~~his~~ bed too early,or if he engages at once in his usual occupation.Sometimes repeated relapses cause a continuance of the disease for months or even years.

S u b - V a r i e t y . - H E N O C H ' S D I S E A S E .

This is more a form of purpura rheumatica than of any other variety of the affection.Henoch was the first to describe it,and he says that it occurs more commonly in children than in adults.It may give rise to death after a short time,or the disease may be protracted - the patient succumbing to the nephritis or to the repeated intestinal attacks in the long run.It is the gastrointestinal symptoms,slight swelling of the joints,the purpuric condition,and the renal manifestations,that constitute the cardinal symptoms of this condition.The abdominal symptoms are usually extremely severe.Vomiting and diarrhoea are nearly always present,and extreme gastric pains,coming on paroxysmally and sometimes with especial severity at night,give the disease its most

striking characteristics. The purpuric eruption occurs in the form of small petechiae, or as purpura urticans; and the ecchymoses, as a rule, make their appearance in separate crops at intervals of one or more days. The older spots sometimes fade to a yellowish colour before the more recent ones have made their appearance. Occasionally the diarrhoea assumes the character of melaema. The abdomen is swollen and becomes extremely tender. The urine is nearly always albuminous, and may contain abundant casts and blood.

PURPURA HAEMORRHAGICA.

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SYNONYM.

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Morbus Maculosus Werlhofii.

DEFINITION.

Purpura haemorrhagica is a form of purpura in which there are added to the symptoms of purpura simplex haemorrhages into and from the various mucous tracts, the nasal, faucial, pharyngeal, gastric, intestinal, renal, uterine, rarely the pulmonary mucous membranes, and exceptionally into the various serous membranes and cavities. It may begin abruptly, in the midst of apparently vigorous health, or after premonitory symptoms extending over several days, vague sensations of discomfort - headache, pains, anorexia, indisposition to exertion, and the like - or it may occur as a transition from other forms of purpura.

HISTORY.

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Though the disease under consideration was probably known to the ancients, and had been observed by Zeller in 1694, it was not fully described until 1775, and by Weill-hof, whose name it sometimes bears. The Germans sometimes call it morbus maculosus, and I have seen it referred to in the literature as land-scurvy. To go back as far as possible, we find petechiae mentioned in the time of Hippocrates; a passage in his writings speaks of a dangerous concurrence of epistaxis with black faecal evacuations: this evidently points to a morbus haemorrhagicus, but there is no mention of any concomitant affection of the skin. Another passage has also been referred to as purpura: "Orduntur autem leucae e maxime lethalibus morbis, velut quae morbus phaeniceus dicitur". Wedl, writing in 1702, interprets this "morbus phaeniceus" as a malignant spotted fever, taking "leucae, - a name vaguely used, like "alphos", for a multitude of conditions of the skin, - to denote the spots of purpura. Rosenbaum and Baerensprung, however, strongly oppose this explanation. Turning to the Latin and Arabian writings, we find no accurate account therein. Great attention appears to have been, for the first time, drawn to haemorrhagic affections of the skin at the beginning of the sixteenth century, when scurvy appeared in an epidemic form in Thüringen and Saxony, almost at the time that Europe was invaded by syphilis. A short time before, all diseases of the skin had been referred to leprosy, but now they were constantly brought into relation with two diseases which

were then known to be capable of producing cutaneous lesions, viz., syphilis and scurvy. The spontaneous occurrence of petechiae - purpura - was first described by Fernellius; but it was not until the beginning of the eighteenth century that the existence of this disease was fully established by Werlhof and his contemporaries, Behrend and Zeller. The first of these authors described, under the name morbus maculosus haemorrhagicus, purpura both with and without fever, P. simplex, and P. haemorrhagica; and he also mentions their occurrence in the course of variola and other diseases, and prescribes certain treatment. Subsequent writers, in their attempts to classify dermatoses, encountered some difficulty in dealing with petechiae in this manner; so that each author placed them in a different position. Plenck ranges them among the "spots" as maculae lividae; Peter Frank puts them among exanthems, while ecchymomata are included in the class impetigines. Bielt, who frankly gave up the attempt to carry out a consistent principle of classification, placed purpura, lupus, and syphilis together in one class, with no common character except that they could not be arranged in any other of his divisions. Willan and Bateman reckoned purpura among the exanthemata, and distinguish several varieties. Wilson, who follows them in several respects, has removed it to the class maculae. A class of "haematoses", subsequently divided into "petechiae" and "pelioses", was arranged for the cutaneous haemorrhages by Alibert and Rayer, in their endeavour to supply an artificial system of classification for the disease under consideration.

CLASSIFICATION.

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The division of purpura haemorrhagica into the two groups of essential and symptomatic cases will be found vastly to simplify its study. The former appear to me to constitute the only true group to which the term purpura haemorrhagica should be rightly applied, and will therefore receive more detailed consideration than the latter. In the essential cases the disease begins without known cause, the purpura being associated with more or less marked septic symptoms and running a course resembling that of an infectious disease. The symptomatic cases, on the other hand, arise as a complication of a severe blood or infectious disease, or from some other well-known cause.

ESSENTIAL PURPURA HAEMORRHAGICA.

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CLASSIFICATION.

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Under the category of essential purpura haemorrhagica it is convenient to recognise two forms, viz., the acute and the subacute, and also to describe the last-mentioned first.

Subacute Purpura Haemorrhagica.

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ETIOLOGY.

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The state of the previous health appears to exercise no definite influence upon the occurrence of this, the most common variety of purpura haemorrhagica, though the disease usually attacks those who are poorly fed

and who live in squalor and misery. It is not, however, uncommon for those who are healthy and well fed to be the victims of this disorder. It is supposed to occur more frequently in women than in men, and, as a rule, in young persons. It is ordinarily considered to be a very rare disease in the newborn, though haemorrhagic manifestations in children are not unusual. Dreschler observed the disease in a child of five months, and Dohrn is said to have seen it in a newborn infant. Others report the occurrence, in children a few days old, of extensive haemorrhages under the skin, in the mucous membranes, death resulting from extensive haemorrhages from the stomach and bowels. There were no evidences of septic infection, and bacteriological examination of the tissues gave negative results. Such cases may be grouped with the "infectious haemophilia of the newborn", but may also be described as forms of purpura haemorrhagica with equal propriety. Although in certain cases of purpura haemorrhagica that have been observed in young girls the father of each had suffered from serious attacks of bleeding from the nose, there appears to be no relation between the disease under consideration and haemophilia. It is not at present known whether there is an element of infection in the disease, or whether different members of the same family are liable, independent of each other, to the same infection; but it is certain that a number of members of a family may be attacked about the same time. Grüning, for example, reports three such cases in children of one family, three, four, and sixteen years of age respectively; while the

simultaneous affection of a similar number of cases has been reported by Forster. I have, however, already referred to the likelihood of all of these forms of disease being infectious in nature, in my general remarks on purpura. This is particularly the case in purpura haemorrhagica, and organisms have been found in the blood and in the tissues by a number of observers. Furthermore, it is doubtful whether the infection in all cases is the same, and no definite and specific organisms have been isolated. Among the diseases supposed to predispose to its occurrence, syphilis and tuberculosis may be mentioned; and occasionally the affection makes its appearance in the convalescence of infectious diseases, such as typhoid fever, scarlatina, and malaria. Phenomena resembling those of purpura haemorrhagica are sometimes observed after the ingestion of various toxic agents, such as the iodide of potassium, the salts of mercury, phosphorus, silver, and other mineral poisons.

SYMPTOMATOLOGY.

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ORDINARY SUBACUTE CASES.

The patient usually complains of loss of appetite, malaise, chilliness, and has irregular pyrexial attacks, especially in the afternoon, for several days preceding the actual onset, or this may happen for ^{weeks to} ~~weeks~~ beforehand. In some cases, however, there are no prodromal symptoms; but there are always haemorrhagic and constitutional phenomena when the disease is fully developed. The purpuric spots make their appearance first upon the extremities, where they remain limited or may become more

generally distributed. In size they vary up to that of the palm of the hand, although they are not usually larger than that of a pinhead. In severe cases there may be large areas of ecchymoses. Subsequent gangrene is not as common ~~in~~ the essential cases as in symptomatic drug purpuras. During the course of the disease successive crops appear, and these may often be produced by rubbing or scratching the skin. The eruption also appears commonly along the friction lines of the clothing, as well as on the pressure points of the bed on which the patient is reclining. Haemorrhagic bullae and vesicles are associated with the purpura haemorrhagica in rarer instances. In purpura haemorrhagica there occur haemorrhages from the free mucous membranes, and give to it its distinctive name and characteristics. The most common sources of bleeding are from the nose, pelvis of the kidney, intestines and uterus, in the order named, - less frequently from the gums, stomach, and bronchi. ~~The~~ haemorrhages appear more or less spontaneously, and not from traumatism alone, as is the case with haemophilia. They may be moderate in extent, or the life of the patient may actually be threatened by their profusity and obstinacy. In this disease also there may be pain and swelling of the joints of the hands, feet, and knees, - as in purpura rheumatica, - and in that order of frequency. These symptoms are due to haemorrhages in and around the joints. The fibro-serous tissues of the joint may be simply swollen or the joint-cavity may be filled with serous fibro-serous effusion. Ankylosis or arthritis may occur as sequelae of the severer forms of involvement of the

joints. At any time in the course of the disease internal haemorrhages may occur into the substance of any of the viscera, but are infrequent in the subacute form, although common in the more acute varieties. The brain and its membranes, the suprarenal capsules, and the lungs are the most frequent seats of internal haemorrhage. The gums are usually normal, but they may be swollen and bleed easily, as in scurvy, although this is strenuously denied by some authors. They may be seat of haemorrhage, although apparently normal in other respects. But the fact that the teeth are not loosened is an important distinction from scurvy. Free haemorrhage from the skin does not occur, and inflammation of the kidneys has not been observed. The occurrence of intestinal ulcers, due to submucous haemorrhage, has been generally asserted. It would seem, however, that ulceration, caused in this way, might occur as it does in Henoch's disease, - a condition quite similar to the form of purpura haemorrhagica now under discussion.

Anaemia and a moderate amount of sepsis are responsible for the constitutional symptoms that are observed. The pulse is rapid and of low tension, the circulatory disturbances depending largely upon the extent of the anaemia induced by the haemorrhages. Very seldom are syncopal attacks suffered from. Chilly feelings usually occur at the onset and throughout the disease, although a definite rigor is but rarely experienced. The temperature runs an irregular course, usually fluctuating between 100° and 103° F., more rarely reaching 104° F. in

severe cases and in children. As the severity of the attack subsides, the temperature gradually attains the normal. A fall in temperature with a subsequent rise is noted in the case of sudden severe haemorrhage, especially if such occur internally. No matter how slight may be the amount of the bleeding, anaemic symptoms occur early in the course of the disease, and in all cases. The anaemic condition persists during convalescence, which is slow and tedious, and before the blood returns to its normal standard weeks or months may elapse. After large haemorrhages, however, anaemic symptoms are more pronounced. As regards the clinical pathology of the blood, we may note that the examination of that liquid at the time that the disease commences shows a rapid diminution in the number of the red corpuscles, and a corresponding reduction in the percentage of haemoglobin. As is the case in acute anaemia after haemorrhage, the white cells are at first increased in number, but later tend to diminish even during convalescence, when the number of red cells and the percentage of haemoglobin are steadily increasing. An alleged pathognomonic peculiarity of the blood in purpura haemorrhagica has been described by Hayem and Bensaude. On allowing the blood to clot in a vessel it was found that after twenty-four hours the retraction of the coagulum is very feeble and fails to express the serum, as happens in normal blood. Associated with this feeble coagulation there is a marked reduction of blood plates - 200,000 to 50,000. These two features of the blood were noted in sixteen cases of purpura haemorrhagica, but there was

never such a combination of circumstances noted in one hundred and fifty-two examples of other diseases, some with purpura: the feeble clotting of the blood and the loss of blood plates could not be established.

During the acme of the attack the liver and spleen are usually enlarged, and this fact furnishes us with another link of the chain which binds purpura haemorrhagica to the group of acute infections. The enlargement of these viscera may continue weeks or months after the attack.

Much interest is attached to the hepatic enlargement in these cases in connection with Letzerich's bacterial studies on the subject. A light fawn colour is given to the skin by the congestion and enlargement of the liver occasioning a slight degree of jaundice, in conjunction with the anaemic appearance of the patient. Prostration is a well-marked symptom, and is more profound than can be accounted for by the anaemia and the constitutional symptoms. It occurs during the earlier stages of the disease, and remains for weeks after the other symptoms of the attack have disappeared. In the severer cases the patient may even pass into the typhoid state, and ~~die~~ in a state of coma with a rapid and feeble pulse, dry brown tongue, and stupor alternating with mild delirium.

DURATION AND PROGNOSIS.

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The duration of purpura haemorrhagica varies from a few days to several weeks, but the disease may be protracted for months, or even years, by a succession of similar attacks, or "relapses", as they are sometimes called. The attacks have been known to cover a period

of about fifteen years, but this is quite exceptional. Hryntschek says he had a boy under his care who had repeated attack during a period of seven years. There are usually three to five such relapses, recurring at regular or irregular intervals. As almost all patients recover from the primary and secondary attacks, the general prognosis of the subacute form of purpura haemorrhagica is ordinarily good; but recovery is slow, the anaemia and prostration persisting for weeks or months, especially if there be a number of successive attacks. A prognosis ^{as X₆} ~~also~~ its duration must always be guarded, as one never knows but that secondary attacks may occur. The disease terminates fatally in rarer instances, either profound anaemia, fatty degeneration of the heart, with or without dilatation, visceral haemorrhages, or exhaustion, being the causes of such fatality.

PATHOLOGY.

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It is through a rupture in the wall of the vessel that the blood escapes. As this does not normally occur, except from traumatism, we must conclude that its wall is weakened either from inflammation or from degeneration due to disease, to poor blood supply, to toxic blood, or to thrombi. Much light has been thrown upon this subject by Silberman, who gave to fifteen dogs small, steady doses of pyrogalllic acid until there appeared areas of stasis in the small arteries, capillaries, and veins. After pressing out the blood of the stasis he injected fibrin ferment into the arteries. The dogs had abdominal tenderness, purpura, vomiting of blood, and bloody stools.

At the attopsy the free escape of blood was seen to be due to the presence of thrombi in the haemorrhagic areas in the small arteries, whose walls had undergone hyaline degeneration, with areas of necrosis. The presence of a specific bacillus was long suspected to be responsible for the purpuric manifestations, and many attempts were made to discover it; but before the time of Letzerich the examinations were so incomplete as to be entirely devoid of value. This observer, however, in 1889, made scientific bacteriological examinations, and discovered a bacillus which he believes to be the specific organism of the disease. Although his experiments have not been fully confirmed by others, their result still remains of considerable value. His patient was a girl suffering from the subacute form of purpura. Bacterial examination, carefully performed, showed in the purpuric spots the presence of long bacilli capable of growth in gelatin, the pure cultures of which, injected into the abdomen of rabbits, represented the original clinical symptoms in all of the twelve cases, and in these a bacillus was found identical with that in the pure culture injected. An examination of the purpuric spots in the rabbits showed dilatation of the capillaries, emigration of white cells, and rupture of the capillary wall, permitting the escape of red cells. The capillaries were filled by the bacilli with abundant spore growth; the bacilli and spores had been previously described by Petrone in his examination of a case of Werlhof's disease, but were considered by him to be due to a mixed infection. Upon squeezing the section Letzerich found that little plugs



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bacilli were found. The streptococcus pyogenes has been isolated in typical cases by Hanot and Luzet, Widal and Therese, Guarnieri, and others. In the first of these the disease was transmitted from mother to foetus, the latter dying and yielding a pure culture from the blood. It is not rare to find rapidly fatal infections of this nature in infants. Lebreton, Litten, Fischl and Adler, Lewis, Silvestrini, and others have been able to isolate the streptococcus pyogenes aureus. Fischl and Adler claim to have produced a fatal anaemia in animals by inoculation with their coccus. Levi obtained in one case both streptococcus pyogenes and the pneumococcus of Fraenkel, and in a fatal case also Auché obtained both the staphylococcus and streptococcus. Claise and Claude have isolated the pneumococcus lanceolatus. Negative results are reported in a fatal case by Denys; in a purpuric complication of angina, by Legendre; and in chronic cases by Millard and by Marfan. The bacillus pyocyaneus was obtained post-mortem from a case of melaena neonatorum by Neumann, and the bacillus coli communis by Dansac, Legendre, and others. Yates reports a rapidly fatal case showing, ten hours post-mortem, the bacillus aerogenes capsulatus. McLeod observed a case closely following Malta fever, and conditions described as purpura haemorrhagica have been reported as following tuberculosis, congenital syphilis, etc. In spite of the fact that in the majority of the above cases the bacterium reported upon was obtained post-mortem and from the viscera, from the lesions on the skin, and was rarely demonstrated in the circulating blood, - there can be little doubt that a numerous group

of cases of purpura haemorrhagica exists which is referable to a variety of bacteria.

HENOCH'S PURPURA.

This variety is sometimes called "purpura fulminans", and is a purpura haemorrhagica of violent character, to which allusion has previously been made, but is appropriately considered in this place. This form of purpura is extremely rapid in its onset, as the adjective used above would indicate, and its course is rapid. Still, there is very often a prodromal period, characterised by malaise, slight fever, and in some cases by ^{pain}~~spin~~ in the joints. The invasion is marked by the appearance of purpura, in severe cases accompanied by large ecchymoses, which tend to become confluent and form hard infiltrations. Immediately after the appearance of the purpura the severe abdominal symptoms, so characteristic of disease, begin. There are marked pain and tenderness over the abdomen, the pain being of the nature of a colic, with exacerbations of great severity. The abdominal wall is rigid and retracted. There is severe rectal tenesmus with bloody stools. Vomiting is usually distressing, the vomited matters being either like those of gastritis, or containing blood. These abdominal symptoms seem to be due to submucous haemorrhages, or to haemorrhagic infarctions occasioned by the thrombi in the small blood-vessels of the gastro-intestinal wall, and whose walls, becoming degenerated, rupture and allow the free escape of blood. In rare instances intestinal ulceration may result, and even after apparent recovery rupture into the peritoneal cavity may occur. The spleen is generally enlarged, and

during the attack the temperature is sometimes elevated, and it may even reach unusual degrees. Haematuria occurs in about one-fifth of the cases, and examination of the urine also usually shows the presence of albumin. Joint symptoms may appear as in the ordinary variety of purpura haemorrhagica. The symptoms continue with great severity for from one to two days, and then subside gradually. They may continue longer than this, but in the more protracted cases there are usually intervals of temporary improvement. Recurring attacks, or relapses at short intervals are usually seen; there may be as many as twenty of these recurrences, but, as a rule, only four or five are seen. The length of the individual attacks, the number of the recurrences, and the intervals between them, are factors to be considered in estimating the duration of any given case. Though sometimes limited to one week or even protracted to nine months, the average duration is seldom more than six to twelve weeks. The prognosis is favourable, though complications of a more or less serious nature may arise, e.g., haemorrhagic Bright's disease and intestinal perforation. Children allow of a more favourable prognosis than adults: in the former the mortality is about 5 per cent., and in the latter 25 per cent. There are not many instances of this variety of purpura in the literature; and as no reliable bacteriological investigations are available, the nature of the disease is not accurately known.

Acute Purpura Haemorrhagica.

This form resembles the subacute variety in many points, but has added to it more aggravated and acute symptoms. It is much less often seen than the variety known as subacute. The severity of the toxaemia, the greater tendency to ~~be~~ visceral haemorrhage, and the greater disposition to attack pregnant women, - are, apart from the rapidity of its course, the three characteristics which mark the acute form of purpura haemorrhagica; and, according to these peculiarities, three clinical groups can be conveniently arranged.

There is no known cause for the cases complicated by marked toxaemia. Men appear to be attacked more frequently than women; and, while the average age of the male patients is 28, that of the female patients is only 12. Any age, however, is liable, cases having been reported between the ages of 1 and 70 years. The onset of the disease is very sudden, with a feeling of chilliness, followed by a rapid rise of temperature to 103° - 104° F. Purpura and haemorrhages from free mucous membranes, especially from the nose, gastro-intestinal tract, and pelvis of the kidney, rapidly follow. These haemorrhages are severe and cannot readily be controlled. Toxaemia of a profound character becomes marked, especially at the onset, severe prostration, mental apathy, stupor, or semi-coma alternating with periods of restlessness, anxiety, and mild delirium, and, finally, in fatal cases, complete coma. The temperature remains high, - 103° - 104° F., - and in severe cases may attain the height of 105° - 107° F.,

especially before death. The latter usually occurs from toxæmia or anaemia, and is preceded by marked weakening of the circulation, as is evidenced by the feebleness, rapidity and irregularity of the pulse in these cases. The cases run a rapid course, and prove fatal in from one to four days, it being exceptional, though possible, to observe a longer duration of the illness than this.

In the second group of cases, characterised by visceral hæmorrhages, the brain and its membranes, and the suprarenal capsules are most frequently affected, though any organ may be the seat of the hæmorrhagic condition. In the cerebral cases the disease begins with the symptoms of acute purpura hæmorrhagica, followed by those of meningeal or cerebral hæmorrhage. The duration of these cases is short, death usually resulting shortly after the occurrence of cerebral symptoms. Though occasionally the disease arises in association with pneumonia, scarlatina, and other infective processes, it is, as stated above, in most cases idiopathic.

Purpura hæmorrhagica is apt to be rapidly fatal in pregnancy, which it always interrupts. The disease usually destroys the foetus before it is expelled. The maternal death may be due to postpartum hæmorrhage or to sepsis. Though the affection may follow labour at term, it commonly appears during the sixth or seventh month of pregnancy.

FACTITIOUS PURPURA.

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A case in which any irritation of the skin, - such

as might be caused by drawing the blunt end of a pencil over it,- produced a white line, which presently became pink and then intensely purpuric,- has been reported by Bruce and Galloway. These authors affirm that in this way could be outlined, as it were, in blood, letters, figures, etc.

GENERAL DIAGNOSIS AND PROGNOSIS OF PURPURA.

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It is scarcely possible for one to go astray in the diagnosis of a typical case of purpura haemorrhagica; but it is, however, a matter of considerable difficulty to distinguish certain specific affections, in which purpuric manifestations are met with, from purpura haemorrhagica. In recent years a number of instances have been recorded in which the onset of acute leukaemia and acute pseudoleukaemia was marked by the clinical manifestations of purpura haemorrhagica, and the cases have been recorded as instances of this disease until the examination of the blood, or the development of specific lesions in the lymphatic apparatus, have made the differential diagnosis possible. The examination of the blood in these cases usually establishes the diagnosis of leukaemia, though this disease may begin with the stage in which the excess of leucocytes is not observed. Pseudoleukaemia beginning in the form of purpura haemorrhagica offers greater difficulties, and the discovery of distinct enlargements of the glands or of the spleen alone will allow of the correct diagnosis being made. The distinction between purpura simplex and purpura rheumatica is made by the fact that the haemorrhages

in the disease under consideration are more severe, and in particular by the occurrence of large haemorrhages from the mucous membranes. In addition to this, the manifest disease of the joints ~~of~~ purpura rheumatica is usually absent in the haemorrhagic form, though some enlargement and tenderness of the joints may be observed. The distinction from scurvy can be ^{made} ~~made~~ by the absence of changes in the gums, and by the fact that in purpura haemorrhagica there is usually an entire absence of deep-seated haemorrhages, especially ^{those} ~~those~~ in the muscles, in the intermuscular fibres, and in the flexures of the joints. Greater difficulty is presented in the diagnosis between haemophilia and purpura, there being points of analogy between the two. Here, however, is found the almost constant history of heredity and the implication of only persons of the male sex. The disposition to bleed at all times upon the receipt of the smallest injury is quite unlike the suddenly-developed and transitory haemorrhages of purpura, which also are more general in their distribution. That form of spontaneous haemorrhage which occurs in the newborn, and affects the gastrointestinal tract, and in which a history of an haemorrhagic diathesis cannot be obtained, - may cause difficulty in diagnosis. Such instances have variously been termed haemorrhagic disease of the newborn, infectious haemophilia, and the like. In the clinical manifestations they resemble purpura haemorrhagica, and cannot be readily distinguished from this condition. Nevertheless, the absence of the hereditary tendency, and the fact that haemorrhages from the umbilicus are more frequently

met with ~~than~~ in purpura haemorrhagica, and that jaundice is more commonly observed, - should serve to make the diagnosis clear. Purpura haemorrhagica may have easily confused with it some of the acute infectious diseases which at times make their appearance with violent haemorrhagic manifestations. Among these variola, scarlatina, diphtheria, and enterica may be noted. The subsequent course of the affection, the history of the case, and general phenomena will clear up difficulty in due course. The history of the illness and the condition of the patient will prevent error in which secondary haemorrhagic manifestations occur in cases of profound alterations of the blood, as from phosphorus, and mercury, or other toxic agents. A knowledge of the circumstances will serve to distinguish purpura simplex from the petechiae and small ecchymoses produced by fleas, by Bright's disease, by diminished atmospheric pressure, by coughing, and the like. Purpura rheumatica presents many points of resemblance to erythema multiforme and erythema nodosum. The mild fever, the pains in the joints, the extravasations of the latter affections, are much like the symptoms of this form of purpura. The nodular, inflamed, tender condition of the lesions, their location - frequently upon the extensor surfaces of the extremities - their course and duration, usually serve to identify erythema nodosum, while ^{with} ~~with~~ erythema multiforme it is usually not difficult to observe its essentially inflammatory nature. Where the petechial eruption of purpura simplex is well marked, where the internal haemorrhages of purpura haemorrhagica are copious, the enquiries of the observer will lead him

to overcome the difficulties which Scheby-Buch has shown to be often opposed to the differentiation of purpuric lesions and ecchymoses due to violence. When the ecchymoses are larger and upon exposed parts ~~of~~ the body, the diagnosis from the lesions alone becomes impossible, and due consideration of all concomitant circumstances is essential. As a circumstance with important medico-legal bearings should be remembered the fact that in purpura very slight violence may call forth extensive ecchymoses.

As already stated, purpura usually ^{terminates} ~~terminates~~ favourably. Its course runs from two to six weeks, rarely longer. Relapses and remissions are frequent. Purpura simplex is of little ~~gravity~~, and need excite little apprehension. Purpura rheumatica almost always ends in recovery; fatal terminations, however, have been known. Purpura haemorrhagica is of much more serious import. Even here, however, though the patient may fall into profound debility from loss of blood, recovery is the rule, the symptoms gradually diminishing in severity until health becomes re-established. In fatal cases death ensues after prolonged and profuse losses of blood. Purpura may subside after a single outbreak or many relapses, and I have already dwelt upon the fact that recrudescences may occur extending through months. Anaemia may persist long after the disappearance of the purpuric symptoms; and at irregular intervals for years, and even throughout life, a tendency to purpura may be manifested.

TREATMENT OF PURPURA.

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GENERAL PRINCIPLES.

As the causes are as yet unknown, a rational prophylaxis against the disease under discussion is at present impossible. For the same reason we cannot with any propriety speak of the fulfilment of the casual indications, in the strict sense of the term. It is, nevertheless, advisable that in all cases of the disease the hygienic surroundings of the patients be improved, wherever they are found to be deficient or bad. Among the lower classes, who are in general badly housed, badly clothed, and badly nourished, this is best accomplished by promptly placing the patients in well-regulated hospitals. When, on the contrary - and this is just as often the case in this disease - the surroundings of the patients are all that can be desired, one's efforts, aside from the ^{main} maintenance of this favourable state of affairs, must necessarily be confined to doing all possible to see that the special indications and the special treatment of the attack are duly fulfilled.

MANAGEMENT OF THE DISEASE.

When one has to deal with a case of symptomatic purpura, it is all-important to neglect no precautions that may be necessary to vanquish the primary disease; or, in cases of drug purpura, to discontinue the offending cause. Aside from this, little can be done for the haemorrhagic tendency directly. The general special lines of treatment, mentioned later, should be adopted for the

haemorrhages from the mucous membranes. In the majority of the cases free stimulation is necessary.

The treatment of cases of purpura rheumatica depends upon which particular type one has to deal with. Salicylic acid and an antirheumatic regimen may be prescribed, with the anticipation of considerable benefit, in the treatment of the first set of cases, where erythema occurs with purpura and articular pains. As generous dosage would have the effect of increasing the haemorrhagic tendency, and even of giving rise to symptomatic purpura, it is important that the drug should not be given in too large a quantity at a time. The treatment in the second set of cases of symptomatic purpura occurring in rheumatic patients must necessarily vary according to whether we are confronted with the purpura of cachexia and anaemia, or with purpura due to the treatment of the rheumatic state by salicylic acid or by the iodide of potassium. The lines for treatment are clearly drawn when the underlying cause in either case is appreciated. The treatment in the ~~third~~ set of cases is that of the purpuric disease in general. The articular pains and the swellings of the joints in purpura rheumatica require anodyne liniments, or, if the pain be very severe, morphine internally or subcutaneously. A special treatment of these symptoms is, however, unnecessary, as they sooner or later disappear of their own accord. For the reasons already mentioned, salicylic acid and the salicylates must be sparingly used, though they are usually of great service when carefully handled.

The treatment of purpura haemorrhagica is not at

all satisfactory, both in mitigating the attack and in preventing recurrences, as there is no known specific for the disease. The relief of the constitutional symptoms and the control of the haemorrhages are the main indications during the attack. For the latter we have the choice of a large number of haemostatics, such as aromatic sulphuric acid, ergot, turpentine, digitalis, acetate of lead, gallic and tannic acids; but no one drug is certain. We employ in turn a number until one is found efficient, but we may, on the other ~~hand~~, exhaust the entire list without result. Saundby recommends chloride of lime, in doses of $4\frac{1}{2}$ grains two or three times a day, and claims good results when all else have failed. Sansom has given sodium sulphocarbolate, in half-drachm doses, for long periods, with marked improvement. Two such cases so treated recovered promptly, although at the start recovery seemed impossible. From 2 to 5 grains of antipyrine, every two or three hours, have been known to prove useful dosages; and probably serviceable, and at least worthy of a trial, would be doses of about a drachm of the benzoate of sodium. Adrenalin chloride is usually of some service, and the same may be said for a solution (2 per cent.) of gelatin in normal salt solution given subcutaneously. Benefit is ~~often~~ derived from 3 to 10-drop doses, thrice daily in water, of a mixture of equal parts of the liquid extract of ergot and the tincture of the perchloride of iron. The patient must be kept absolutely quiet - with the agency of hypodermic morphine if necessary - during a haemorrhage. In all cases, and at all times, care should be taken to guard against

traumatism, over-exertion, and excitement. During the acute-ness of the attack the patient should be kept in bed. The diet will depend upon the condition of the patient. Various ~~foods~~, such as a diet consisting largely of gelatin, have been suggested. It is well to give fresh fruit-juices, and a diet somewhat similar to that indicated in scurvy. No good reason exists for the latter, except that some of the so-called purpura may in reality be scurvy or something akin to that disease. Litten gives the following suggestions as to diet in this disease: The food must be bland, and should be given cool. Coffee, strong tea, and spirits should be strictly forbidden. Alcohol may be allowed when there is collapse. Milk and somatose are suggested as the most valuable foods, but the dietetic indications presented by any acute febrile affection must also be met. After the subsidence of the acute attack the patient may be allowed to go about and to have his diet increased, vegetables and fruits being especially indicated. The bowels must be kept moderately open, but the over-use of laxatives is contraindicated, as intestinal haemorrhage may thereby be induced. Alcohol and highly seasoned food are, as stated, at no time permissible. Uterine haemorrhage may be controlled by the introduction of tampons in the usual way; and epistaxis may be treated by astringents or antipyrine sprays (5 per cent.). The nares may have, however, to be plugged in obstinate cases. Warmth to the body, heat to the praecordium, and opium in small doses, digitalis, ~~strychnine~~, and other cardiac stimulants, must be employed if symptoms of sudden profound anaemia arise. Inhalations of oxygen

gas are serviceable. In severe cases salt solution - one drachm to the pint - may be given by the rectum; or, in the case of intestinal haemorrhage, sterilised saline solution may be injected subcutaneously. Arterial or venous transfusion is not to be employed, on account of the danger of traumatic haemorrhage. It is advisable to elevate the bed, and in certain cases to apply ligatures to the extremities. General principles must govern the indications for constitutional treatment. The joint symptoms, if present, may be alleviated by anodyne liniments, lotions of lead and opium, by hot applications, by ichthyol or iodine liniment, or by the internal use of the salicylates or salicylic acid itself, with, of course, the precautions already mentioned. Cardiac stimulants may be given should the pulse become weak, and of these digitalis and strychnine are the best. Alcohol is contraindicated. Of tonic drugs the best are quinine, arsenic, and strychnine in combination. Owing to the risk of fresh haemorrhages or the provocation of a recurrence, iron should not be given until the haemorrhagic tendency has disappeared. Arsenic may be employed in these cases with benefit; it should be continued in full doses until the blood is normal. Iron may be gradually added after a time, but whenever a relapse threatens it must be promptly discontinued. A change of climate is desirable in protracted cases and in those with a series of recurrences. The most suitable climate is ^{one} in which the air is dry and bracing, and must be inland, as it is found that the disease prevails most extensively along the sea coast. A maximum of fresh air being of importance, the

temperature of the place selected should be sufficiently warm to enable the patient to be out of doors without the necessity of forced exercise to keep him warm. After the illness it is advisable to disinfect the rooms and the clothes of the patient, for in all probability the disease is due to an infectious and specific micro-organism.

Finally, as the course of the disease in the acute cases of purpura haemorrhagica is that of an intense infection with extreme prostration of all the vital powers, stimulation becomes an important factor in the treatment. It may even be necessary to employ alcohol for this purpose, although it is contraindicated as a routine treatment in the subacute cases. With the exception of larger and more efficient dosage, the haemorrhagic tendency should be combated on the therapeutic lines that I have already described. When internal haemorrhage occurs, surgical interference is justifiable in no case, for the haemorrhages, especially in the cerebral cases, are usually multiple, and the danger of traumatic haemorrhage is exceedingly great. In addition to the more purely mechanical means for controlling haemorrhage, sodium benzoate (10 grains), sodium sulphocarbolate (30 grains), chloride of lime ($4\frac{1}{2}$ grains), or one or other of the above-mentioned haemostatics may be given at longer or shorter intervals according to the indications of the particular case. The copious rectal injections of normal salt solution is often of the utmost value in cases that have resisted other forms of medication.

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CASES OBSERVED.

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No. 1.

This patient was sixteen years and six months of age, and employed in a photographic business. His father had died recently of phthisis pulmonalis, and he has since lived with his mother and five brothers and sisters in needy circumstances; he states that he had hitherto enjoyed, until the day before his attack, perfect health. An inherited or individual predisposition to haemorrhage does not exist. None of the other members of the family have at any time been subject to bleeding, and he states that they are all perfectly healthy. His present illness came on suddenly and without warning or apparent cause on the 12th day of March, and when he was feeling in every respect entirely well, the first symptoms being in connection with the tongue from which bleedings took place. On the following morning the patient noticed several bluish-red spots on his lips, and by noon his entire body was covered with numerous haemorrhagic spots of various sizes. Meanwhile his appetite was entirely unaffected, and he has no headache, no pains in the limbs and joints, in short, no subjective troubles whatever. On the 14th day of March he was presented for treatment; when it was seen that he was a moderately strong youth, of rather pale complexion. Petechiae scattered over the face; on the upper and inner margin of the orbit on the left side, a large violet-blue ecchymosis. Exceedingly abundant petechial eruption on the body and also

on all the extremities. The lips and gums covered with crusts of blood. Upon removing them the gums appeared superficially excoriated in many places, but otherwise normal, except that they were somewhat pale. On the lips a few bluish-red spots about as large as a lentil, and on the dorsum of the tongue three bullae about three lines in diameter, filled with blood. The nostrils on both sides filled with blood, which being dried caused their obstruction. Respirations eighteen per minute. No abnormalities of the heart, lungs, liver, or spleen. Pulse moderately strong and regular, 74. On March 14th, the temperature in the morning was 98.6° , and in the evening 98.2° F.; and on the next day it was 98.6° and 100.4° F., respectively at those times. During this day new petechiae and epistaxis were observed. The ophthalmoscopic examination of both eyes revealed no haemorrhages in the retina. Upon making an histological examination of the blood an increase of the leucocytes was noted.

March 16.- Temperature: Morning, 98.2° F. Evening 100° F. Small ecchymoses on the conjunctiva. Upon the body, besides new petechiae, several large, irregularly shaped ecchymoses. Gums not spongy, pale. Very dark, bloody urine was passed several times during the day. Countenance rather pale. Appetite good. General health unaffected.

March 17.- Temperature: Morning, 98.7° F. Evening 98° F. Urine continues bloody. Two bloody stools. The older petechiae already greenish and brownish in colour. New petechiae. Towards evening, epistaxis, which during the night occurred again.

March 18.- Temperature: Morning, 98.7 F. Evening, 102 F. Recurring epistaxis so severe

as to render plugging of the anterior and posterior nares on both sides necessary. Persistent haemorrhages and several bloody stools during the day. The patient feels languid and is very pale. Respiration regular, and not accelerated. No enlargement of the spleen. Pulse small, somewhat tense, 84. March 19th.- Temperature: Morning, 100.4° F. Evening, 102° F., reduced at 11 p.m. to 98.7° F. by an antipyretic. During the day the blood trickled from the nostrils through the tampon. Bloody urine and stool. Great weakness and the patient very pale. March 20th.- Temperature: Morning, 102.2° F. Evening, 103.3° F., reduced as on previous evening. Delirium. Extreme pallor. No stool. No haematuria. March 21st.- Temperature: Morning, 98.2° F. Evening, 102.6° F., reduced as before. Removal of tampon. No stool. No haematuria. No cutaneous haemorrhages. March 22d.- Temperature: Morning, 100.4° F. Evening, 103.1° F., and reduced to 101.8° F. by means of the bath. No new haemorrhages. Condition unchanged. March 24th.- Temperature: Morning, 100.4° F., and continued at the same height throughout the day and evening. No sensory disturbances. Patient extremely pale. March 25th.- Temperature: Morning, 100 F. ~~Evening~~, 98.7° F., and antipyretic having been given during the afternoon. Petechiae faded. No enlargement of the spleen. No haemorrhages. March 27th.- Temperature: Morning, 101.4 F. Evening, 101.6° F. Patient's condition unchanged. March 28th.- Temperature: Morning, 99° F. Evening, 100.4° F. Next day there was no fever, and from this time the appearance of the patient improved. The sensorium became perfectly clear. So long as the haemorrhages persisted, the treatment consisted in the

subcutaneous injection of ergotin, and the internal use of the haemostatics, ^{calcium chloride} and ice. Appropriate dietetic rules were enjoined, viz., rest, the horizontal position, and for nourishment nothing but cold milk. The use of iron was begun on May 29th, and by the 4th of April the patient had perfectly recovered.

No. 2.

Patient, a healthy lad of fifteen years, had an attack of severe gastro-~~intestinal~~ catarrh, with slight jaundice, from indigestion. A few days after, pain in the finger-joints of both hands without swelling. A day or two later, extensive purpura on the thighs, followed soon after by violent colic, vomiting and black stools. The pains in the abdomen were so very severe as to keep the patient from sleeping; the region of the transverse colon was distended and tender. Slight fever, - never above 101.7°F. After five days, these symptoms disappeared, but within the next three days, a relapse occurred, with exactly the same symptoms. Convalescence after one week. Within the next three weeks or so, three other relapses occurred, always accompanied by bloody motions, which were either black or orange-coloured, and contained more or less considerable masses of blood. There were five such attacks altogether within seven weeks. Final recovery complete. Opium seemed to give the best results of the drugs used, the general treatment being on the lines laid down in the preceding text.

No. 3.

The duration of this case was shorter, viz., three weeks. The patient was a boy of four years who was

suffering from such dysenteric symptoms as colic, tenesmus, and a few bloody motions. At the same time there were some large patches of purpura on both elbows and thighs. Three days' treatment caused an improvement in his condition, but some fresh purpuric spots appeared on the scrotum and prepuce. A few days after, a fresh attack of diarrhoea with streaks of blood in the motions and violent colic; then constipation; fresh relapses of purpura.

No. 4.

An healthy girl of twelve complained of rheumatic pains in the limbs for the last week, presently accompanied by pain and swelling of the wrists and ankles, with slight pyrexia. Heart unaffected. A few days later, extensive purpura on the abdomen and lower extremities. Very violent colic, keeping her from sleeping; repeated vomiting and diarrhoea, with much blood in the motions. Disappearance of all the symptoms after five days. Relapse followed. Four such relapses within the like number of weeks. Finally complete recovery. No special treatment adopted other than that already laid down.

No. 5.

This patient was also a girl, but a year younger than the one whose case had just been described. The preceding summer she had suffered from rheumatic pains in both ankles and in the right hip-joint. About a year after this, there was again pain in the wrist and ankles, but no swelling. This was immediately followed by purpura on the lower limbs, moderate fever, loss of appetite, vomiting and colic, with solid motions containing a large

quantity of blood. Urine normal. There was nothing abnormal to be found in connection with the heart, with the exception of arrhythmia and slow rate of pulse - as low as 60 - which was sometimes observed. In the course of five weeks, three such attacks took place at intervals eight to nine days. The last attack unaccompanied by fever. An ice-bag was applied to the abdomen and seemed to have a good effect; the purpuric spots also faded. Suddenly the pains returned in the left arm and in the right elbow-joint, and on the following night, there occurred very violent colic, vomiting of green matter, and four motions of a deep orange colour mixed with a large quantity of blood-clot. No fever, tongue clean. Ice-bag to the abdomen, iced milk as nourishment, and gelatinous drinks. Two days afterwards, another black motion. The patient seemed perfectly well during the next five days, when another relapse of the purpura took place. There was now an interval of two months, when a violent attack occurred, which was quite similar to the preceding ones, and with this the disease terminated.

No. 6.

A boy, aged seven years, had suffered for almost nine weeks from a number of attacks of purpura which were always becoming less marked. These consisted of violent colic with tenderness of the right side of the transverse colon, bloody motions, purpuric spots on the fore-arms, and rheumatoid pains in the limbs, but without swelling of the joints or fever. Hands and feet sometimes became oedematous. Urine normal. Ergotin and iron given without success. Under general treatment recovery took place.

No. 7.

A boy of eight years presented the history of a highly febrile illness - temperature 105°F. - having occurred a year before, which was supposed to be typhoid fever. On the fifth day of this attack, there had been purpura and spots of erythema, haemorrhage from the gums, and swelling of many of the joints. Recovery after eight weeks. There had been repeated vomiting during this illness, but the motions had not been examined. His present attack was of a similar nature with violent colic; when seen, numerous purpuric spots were still visible on the back, nates, and thighs. The ordinary treatment was instituted, special indications met, and the patient recovered perfectly.

No. 8.

On examining an infant, aged three months, after twenty-four hours of restlessness and malaise, pallor was observed, together with rapid respirations and pulse, and slight mucous râles in the chest. No vomiting or diarrhoea. The legs, thighs, and abdomen showed twelve haemorrhagic spots the size of a shilling. A second examination, four or five hours later, showed a marked increase in the number and size of the ecchymoses, which now appeared over the mouth and face. The pulse was imperceptible, the infant extremely agitated and weeping, while still taking the breast with avidity. There were no haemorrhages in the mucous membranes. The ecchymotic patches continued to spread, so that the lower limbs looked as if dyed in port wine, and were quite oedematous

and ~~pale~~. The patient died in about ten hours after the first appearance of the ecchymoses, which were to be seen all over the body.

No. 9.

A young woman, aged nineteen, had always lived in most affluent circumstances, and, except for a moderate anaemia for two years previous to the attack, had never been ill. Father would bleed severely from slight injuries, and suffered from repeated epistaxis when a boy. No history could be obtained of haemophilia farther than this. The day before being seen for the first time, and at 1 o'clock in the morning, she had a slight chill without rise of temperature. Very anxious and nervous. Has been perfectly well for the preceding weeks. A marked rigor at 12.45 p.m. Temperature 103.5°F. Developed epistaxis, becoming more and more profuse in spite of the usual haemostatic medicaments. When first seen, she had a temperature of 98.4°F. Pulse 130, irregular and weak. Pallor of the skin and mucous membranes; prostration profound; complete mental apathy, although her mind is clear when aroused. Purpura rapidly appearing. Gums normal. No evidence on ~~ex~~amination of any appreciable disease. Spleen enlarged; epistaxis continuing, the blood being dark and not coagulating. Profuse uterine haemorrhage. Haemorrhages were checked finally by plugging the anterior, and posterior, nares with cotton dipped in styptic collodion, and by the firm application of tampons, at 1 p.m. At 8 o'clock in the evening the temperature was 102.8°F. Pulse 130-180, more weak and irregular; semi-coma alternating with periods of restlessness and mild

delirium. Haemorrhage from nose and uterus continued in spite of former treatment. At 10 p.m., warm sterilised salt solution was injected per rectum and subcutaneously, with slight but temporary improvement. The weakening action of the heart was not favourably affected by whiskey and digitalis in large doses. The next day, at 9 o'clock, the temperature was 104 F., the respirations 32, and the pulse 148. Large, offensive, tarry stool of altered blood. No improvement followed the continued injection of the saline solution. At 6 p.m., the pulse was flickering, the temperature 106.2 F., and the patient completely comatose. The next day, two and one-half days after the onset of the disease, the patient died. A necropsy was not allowed.

No. 10

A pregnant woman, aged twenty-one years, at the sixth month, had purpura for four days; then rapid onset of increasing purpura, with haemorrhage from the gums, kidneys, and stomach. Miscarriage on the sixth day, with post-partum haemorrhage. Four days after the development of the acute symptoms, the patient died: i.e., on the eighth day; and in spite of all efforts to save her.

No. 11

Gentleman, aged 63, recently returned from tour in Italy, says that he has got his bowels into an irregular state owing to travelling with so many ladies, &c. Finds that his bowels have not acted for five days and complains of abdominal pain and general

depression.

Ordered a soap and water enema, to which two ounces of ol Ricini are added.

Copious evacuation of bowel, after some strain=
=ing, but much relieved, and passed a comfortable night.

The following morning, on visiting the case, the upper part of the anterior aspect of the thorax, extending from above each mamma to the nape of the neck, was found to be covered with a rash, as if the area had been thickly peppered with chopped linseed grains.

Patient complained of no ill effect. No temper=
=ature: no malaise; and in fact he says he never felt better and wishes to get up.

No 12

Girl, A.F., aged 19, admitted into ---- Asylum.
Condition: Acute mania. History: love affair.
Tall, spare girl. Neuro-bilious temperam^{ment.}
Anaemic and under-fed.

On physical examination, the dorsal surfaces of each foot, and extending up each shin bone to below the knee, was covered with a fine, sharply defined bright brown rash, as if the surfaces had been thickly peppered with a mixture of ground coffee and cayenne pepper. The front of each thigh had also a rash somewhat similar but fainter and browner in colour.

The outer surfaces of each upper arm had also a faint rash, which appeared to be dying away.

Patient confined to bed. Bowels regulated. Put on liberal diet and Pil Blaudi, gradually increased until patient was taking 40 grains three times a day.

Purpuric rash entirely disappeared, after sixth day in bed.

No. 13

S.D. Married woman. Aged 47. Admitted into ----- Asylum. Condition: Agitated, religious melancholia, with marked suicidal tendencies.

Neuro-bilious temperament. Nourishment, fair. Pale, sallow skin. Dejected, careworn expression, and evidently in poor health.

Temperature, 100.2. Urine ---? History of sleepless nights. ~~Refused~~ Refused food for some days.

Owing to considerable motor excitement, patient was given Sulphonal, 30 grains, and Paraldehyde, two drachms. Several hours refreshing sleep obtained.

While the patient was being admitted, it was found that she had an extensive dark blood-stained patch slightly above her left iliac crest, which extended backwards towards the spine; while slightly above, and corresponding to her right eleventh and twelfth ribs, was another patch of the same colour and the size of a half-crown piece.

Blood crusts were found about the mouth. It was ascertained, afterwards, that the evening previous to admission the patient had attempted to thrust a clothes peg down her throat.

Mouth gagged and buccal cavity found in foul

state, blood-stained, and an injury to vault and posterior part of tongue and soft palate, while blood was oozing from lingual aspect of the gums. Cavity washed out and swabbed with adrenaline chloride (1 -- 1000).

The following morning it was found that the two areas on the trunk had coalesced and extended to such an extent that the posterior surface of the waist, for the breadth of three or more inches, was a reddish blue mass.

The patient was kept in bed and dosed with morphine ~~morphine~~ to keep her quiet, while into the edges of purpuric ~~purpuric~~ area a hypodermic injection of "hemisine" ($\frac{1}{12}$ grain) was given, under antiseptic condition, in two places, while an ice pack was placed over all.

At the upper limit of the left popliteal space, and more to the inner aspect of the leg, a thumb-like blood-stained area was discovered for the first time.

It was decided to apply a spray of Ethyl Chloride and Aether alternately and at frequent intervals. While the treatment was in progress, no extension appeared to take place; in fact, the affected area seemed to contract to some extent, while the surrounding healthy tissue became blanched; having the effect of making the purpuric area stand out like mosaic work. When the treatment was discontinued, however, the anaemic condition of the surrounding tissues gradually gave way to hyperaemia and some

tingling and pain about the parts, while at the same time the affected patch, within 70 minutes, had increased in extent until it reached the size of a crown piece.

The large, wandering purpuric patch on the trunk did not extend, but the area became softer, and gradually the colour changed to a dull brown, until after three weeks little of the discolouration was left.

It should be noted, however, that the smaller area on the leg appeared to be slower in resolution evidently owing to the result of the marked hyper-aemia of the surrounding ^{issues} ~~area~~, following the use of the sprays.

Urine afterwards was found to contain no albumen, and the stools no blood.

No. 14

Lady, aet. 30. Single. Second sister in family of three sisters and one brother. Healthy stock. Eldest girl neurotic and married. Recently returned from protracted tour in the East. Complains of ^{like} cramp-~~pila~~ pains in lower part of abdomen, in middle line, with painful and frequent micturition. Urine high coloured and scanty.

Observed to be drowsy and inclined to tears, for last few days, and complains now of headache and nausea.

On being called, found the patient looking out of health and far from her normal good spirits. Wretched

three times in about twenty minutes, and had well marked rigour in my presence.

Put to bed at once, and temperature found to be 103.6; pulse 118; respirations 32. Palpation of the abdomen revealed nothing beyond slight tympany, while base of right lung gave a patch of dullness from three to four inches in area. No history of chill or cough or pain in the side.

Urine voided appeared concentrated and gave reaction of blood.

Breath foetid, and buccal cavity deep red in colour, more especially the gums. Patient said her mouth felt so "full," and the gums "thick."

Vomited quantity of frothy watery matter, bile-stained and streaked with freshly shed blood, which was found to be oozing from the gums.

Face appeared dusky brown on colour, especially round the orbits; prominent parts, such as the chin, nose, cheek bones, and forehead, appeared pale, and ultimately became blanched.

An old and faithful servant, earlier in the day, had administered a dose of "salts," with the result that during my visit the patient had a copious evacuation of the bowels, immediately followed by a dark, tarry-looking material -- almost like pieces of severely burned sausage -- followed, finally, by obviously more recently shed blood ~~and~~ corpuscular material.

The bed was at once tilted and crushed ice applied to the abdomen, and a hypodermic of morphine given, while ice was placed in the mouth.

Retching and vomiting continued at intervals; being allayed, to some extent, by repeated small doses of tincture of iodine.

Blood examined: diminution of corpuscular element, with marked leucocytosis.

Widal's reaction, negative.

Fundi impossible to be examined, and no suffusion of conjunctivae.

Small bloody stool again voided, with urine more deeply coloured and smoky.

Splenic dullness slightly increased. Pulse more feeble, and cardiac arrhythmia.

Ice bags renewed and patient more restful. Calls for cold drinks. Temperature falling.

Hypodermic of strichnia and digitaline given.

Patient more restful, although retching continues. Larger dose of tincture of iodine given and some fluid nourishment taken and retained.

The following day, patient was timed to menstruate, with issue not readily to be forgotten.

Temperature, at 10 p.m., 102.2; pulse 108; respirations 28.

Dosed ~~her~~^{over} several times during the night, but restless between times. Took fluid nourishment and vomited four times. No action of bowels. ~~Decided~~
~~urine~~^{urine}, xvi ounces, in twenty-four hours. Decided to syphon out lower bowel and give rectal feeds with

brandy.

Complained of pains in knee joints and considerable tenderness over calves of the legs.

Menstruation commenced following day and large clotted material ^{discharged} ~~voided~~, although nothing abnormal; and continued for four days, during which time no progress appeared to be made.

On syphoning out the bowel each day, tarry matter was voided, but no signs of recent haemorrhage or leakage low down in the bowel. Vomited watery matter, bile-stained, and thrice darkly stained with blood. Pain in abdomen entirely disappeared and also irritation of the bladder. Some tenderness over splenic area. Temp., 10 p.m., fourth day of illness, 98.2; pulse 96; respirations 26.

Without any warning, patient said she felt wet; and on examining bed-clothes, everything was found saturated with blood. The haemorrhage was found to be vaginal and incessant.

Both nurses in attendance admitted they had never seen anything to equal it.

At this time, patient vomited freely much blood-stained matter.

Twenty minutes or more before the vaginal haemorrhage appeared, the lower bowel had been carefully washed ^{out, since} ~~out~~ ~~since~~ there had been no motion for the last two days. As if to accentuate matters, there was a copious stool of entirely bloody matter, forming a perfect cast of the canal.

Patient rapidly became comatose, with no pulse at the wrist, and the heart only faintly heard over the praecordia, ~~precordia~~, while it was impossible to distinguish the beats.

A consultant was speedily in attendance, and pronounced the case hopeless, and beyond any treatment he could suggest; in fact, treatment, under such conditions, he held, would be heartless.

On account of

~~Being well aware of~~ the social position of the patient, as well as her immense wealth, death at such a time would entail various & considerable complications. It was urged, therefore, that if there was no hope of a recovery, at least her life might be prolonged for a stated period.

As the vomiting still persisted, half grain doses of cocaine hydrochlorate were given by the mouth, at intervals.

A P.V. was made, and the vagina cleared of clots. The os uteri was patulous and slightly distended and full of clotted material, while a perceptible discharge could be felt.

Two Hemisine Suppositories -- "Enules" -- were taken and placed in clean glass syringe and gently heated.

The os uteri was rapidly cleared of all clots with swabs and the nozzle of the syringe inserted, and the soft mass carefully passed into the canal. The vagina was then thoroughly packed.

Heat applied over praecordia and extremities. Foot of bed still more elevated, and hypodermic of

strychnine with digitalis given, ~~under the relation~~
 Marked cessation of retching and vomiting after first
 dose of cocaine. Hemisine tabloid $\frac{1}{16}$ p. dissolved in
 tablespoonfuls of water and given by mouth.

Six ounces of warm normal saline solution were then
 carefully syphoned into the lower bowel, but not
 retained.

Half drachm of Tincture Opii in small quantity of
 boiled starch was substituted, and saline injection, *afterwards*,
 repeated and retained.

Patient comatose and blanched; plucking at the
 bed-clothes. Heart, perhaps, a little stronger, but
 marked arrhythmia. Very little sleep for last four
 days and nights. Decided to give rectal feed of
 predigested egg and two ounces of brandy, in which eight
 grains of veronal were found to be soluble and
 incorporated.

Result was excellent. Several hours of refreshing
 sleep. No retching. No vomiting. No haemorrhage
 from bowel.

After two days of sleep, during which period the
 patient was alternately fed per rectum and by
 infusion of warm saline solution passed into the
 bowel, a pulse was obtained at the wrist.

The vaginal packing was removed after third day,
 and haemorrhage had entirely ceased.

From this day, patient made steady progress, and
 in three months was able to leave her bed.

The temperature remained subnormal, except for the first two days of the illness, until the end of the eleventh week.

No recurrence of the illness. Recovered.

*L'alba vinceva l'ora mattutina
che fuggia innanzi, sì che di lontano
conobbi il tremolar della marina.*